

## ABSTRACT

Disclosed herein is an encryption and communication apparatus and method using a modulated delay time feedback  
5 chaotic system. The encryption apparatus of the present invention includes chaotic signal generating means for generating a high-dimensional chaotic signal in response to an original chaotic signal and a predetermined feedback chaotic signal, delay time modulating means for delaying the high-  
10 dimensional chaotic signal output from the chaotic signal generating means by a predetermined time and modulating the time-delayed chaotic signal, and feedback means for receiving the chaotic signal output from the chaotic signal generating means and the modulated time-delayed signal output from the  
15 delay time modulating means, performing addition and subtraction operations with respect to the received signals, and feeding the operated result back to the chaotic signal generating means. Accordingly, the present invention is advantageous in that it modulates a delay time so as to  
20 prevent an information signal contained in a chaotic signal from being attacked from the outside, so that it is impossible to detect an exact delay time contained in a modulated time-delayed chaotic signal and to decrypt the information signal, thus constructing a more robust and reliable encryption  
25 system.